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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/566,550

01/27/2006

Thomas Justel

DE 030272

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05/14/2008

PHILIPS INTELLECTUAL PROPERTY & STANDARDS

P.O. BOX 3001

BRIARCLIFF MANOR, NY 10510

EXAMINER

MCKANE, ELIZABETH L

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

05/14/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/566,550	<b>Applicant(s)</b> JUSTEL ET AL.	
	<b>Examiner</b> ELIZABETH L. MCKANE	<b>Art Unit</b> 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 February 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 9-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-5, 7, 10, 11, 17, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura (US 6,194,821) in view of Wekhof (US 5,144,146).

Nakamura teaches an apparatus for reducing contaminants in a fluid stream (col.1, lines 44-53), wherein the apparatus includes a dielectric barrier excimer discharge lamp (col.1, line 64 to col.2, line 7). The lamp filling gas may be xenon, argon, or krypton (col.10, lines 46-50) with a filling gas pressure of 10-60 kPa (col.10, lines 51-55). The lamp radiates UV light of 172 nm, 222 nm, or 308 nm, depending upon the filling gas. See col.5, line 64 to col.6, line 2.

The excimer lamp of Nakamura is not pulse operated. However, Wekhof discloses an apparatus used for the destruction of toxic substances with UV radiation wherein the UV radiation itself is pulsed to optimize the energy contacting the sample. Wekhof further discloses that "a peak current of 1,500 Amperes can be reached with a rise time of about 7 microseconds." See col.5, lines 6-8. Thus, each pulse has a duration of 14 microseconds. Moreover, the idle period between pulses, or cycle time, is disclosed by Wekhof to be in the range of 5-100 Hz (col.4, lines 9-10) which converts to 1000-20,000 microseconds/pulse. Wekhof further teaches that "a great

enhancement in the destructive capability of the UV radiation may be achieved by adjusting...the pulse rate...delivered to the medium” (col.3, lines 34-42). For this reason, it would have been obvious to pulse the UV radiation, as disclosed by Wekhof, in the method and apparatus of Nakamura. Moreover, as Wekhof teaches that “the pulse repetition rate” and “approximate optimum values of the system parameters may be determined empirically with a relatively few iterations” (col.3, lines 63-66) and that the “the precise values optimizing performance will generally depend on the specific target medium and toxins” (col.3, line 67 to col.4, line 1), it is deemed well within the purview of one of ordinary skill in the art to optimize both pulse rate and duration for the specific target medium and toxins.

With respect to claim 21 specifically, it has been held that “[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims.” *In re Young*, 75 F. 2d 996, 25 USPQ 69 (CCPA 1935).

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura and Wekhof as applied to claim 1 above, and further in view of Say et al. (US 6,063,343).

Nakamura is silent with respect to a catalyst having an upstream end and a downstream end in the apparatus. Say et al. also discloses an apparatus for fluid purification using UV radiation. In the apparatus of Say et al., a photocatalyst **102** has an upstream end (adjacent UV tube **104**) and a downstream end (adjacent outlet **110**). See Figure 1 and 2; col.3, lines 60-61. It would have been obvious to one of ordinary

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skill in the art to employ the tube of Nakamura in the apparatus of Say et al. as both are used for the decomposition of organic contaminants.

4. Claims 6 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura and Wekhof as applied to claims 1 and 17 above, and further in view of Jüstel et al. (US 6,398,970).

Nakamura is silent with respect to the lamp including a phosphor material. Jüstel et al. discloses a device which may be employed in photochemical processes (col.4, lines 64-67). The device includes a xenon-filled dielectric lamp including a phosphor material such as  $\text{LaPO}_4\text{:Pr}$ . See col.2, lines 28-31. It would have been obvious to one of ordinary skill in the art at the time of the invention to include a phosphor such as  $\text{LaPO}_4\text{:Pr}$  in the lamp of Nakamura as these phosphors have been evidenced to emit in the wavelengths required by the method and apparatus of Nakamura.

5. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura and Wekhof as applied to claim 1 above, and further in view of Akagi (JP 1-182527).

Nakamura is silent with respect to locating the discharge apparatus within the precombustion gas stream of a combustion chamber. Akagi teaches an apparatus including a combustion chamber **3** wherein a UV lamp **16** is positioned in the precombustion gas stream **10**. Akagi discloses that the positioning of the UV lamp in this position improves combustion by converting exhaust gas that backflows in the intake port **11**. It would have been obvious to one of ordinary skill in the art to use the

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discharge apparatus of Nakamura in the manner claimed by Akagi since Nakamura teaches that the apparatus is effective in the decomposition of organic contaminants.

6. Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura and Wekhof as applied to claim 17 above, and further in view of Jones (US 5,925,320).

While Nakamura teaches a single light source, it would have been obvious to duplicate the number of light sources for a multiplied effect, where the result is not unexpected. See St. Regis Paper Co. V. Bemis Co., Inc., 193 USPQ 8, 11 (7<sup>th</sup> Cir. 1977).

Nakamura fails to disclose a pollutant sensor. Jones, however, teaches an air purification system employing UV light wherein an activation switch **92** may include circuitry for sensing the level of ambient air contamination and automatically activates/deactivates the UVC source **80** and blower **22** when a predetermined level of contamination is sensed. See col.4, lines 42-52. As this type of automatic operation assures adequate purification of the gas stream while preventing operation of the blower and UV source when unneeded, it would have been obvious to one of ordinary skill in the art to modify the apparatus of Nakamura with Wekhof in this manner.

7. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura in view of Jones.

Nakamura teaches an apparatus for reducing contaminants in a fluid stream (col.1, lines 44-53), wherein the apparatus includes a dielectric barrier excimer discharge lamp (col.1, line 64 to col.2, line 7). While Nakamura teaches a single light

source, it would have been obvious to duplicate the number of light sources for a multiplied effect, where the result is not unexpected. See St. Regis Paper Co. V. Bemis Co., Inc., 193 USPQ 8, 11 (7<sup>th</sup> Cir. 1977).

Nakamura is silent to disclose a pollutant sensor. Jones, however, teaches an air purification system employing UV light wherein an activation switch **92** may include circuitry for sensing the level of ambient air contamination and automatically activates/deactivates the UVC source **80** and blower **22** when a predetermined level of contamination is sensed. See col.4, lines 42-52. As this type of automatic operation assures adequate purification of the gas stream while preventing operation of the blower and UV source when unneeded, it would have been obvious to one of ordinary skill in the art to modify the apparatus of Nakamura with Wekhof in this manner.

8. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura and Jones as applied to claim 12 above, and further in view of Wekhof.

The excimer lamp of Nakamura is not pulse operated. However, Wekhof discloses an apparatus used for the destruction of toxic substances with UV radiation wherein the UV radiation itself is pulsed to optimize the energy contacting the sample. For this reason, it would have been obvious to pulse the UV radiation, as disclosed by Wekhof, in the method and apparatus of Nakamura.

### ***Response to Arguments***

9. Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ELIZABETH L. MCKANE whose telephone number is (571)272-1275. The examiner can normally be reached on Mon-Fri; 5:30 a.m. - 2:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran can be reached on 571-272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Elizabeth L McKane/  
Primary Examiner, Art Unit 1797

elm  
11 May 2008